

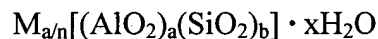
II. AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of sealing a subterranean zone penetrated by a wellbore comprising:

~~mixing a cement mix comprising a base blend comprising zeolite and at least one cementitious material~~ with a mixing fluid to form a cement composition, wherein the base blend comprises at least one cementitious material and at least about 20 weight percent zeolite;

placing the cement composition into the subterranean zone; and
allowing the cement composition to set therein.

2. (Original) The method of claim 1 wherein the zeolite is represented by the formula:



where M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH₄, CH₃NH₃, (CH₃)₃NH, (CH₃)₄ N, Ga, Ge and P; n represents the cation valence; the ratio of b:a is in a range from greater than or equal to 1 and less than or equal to 5; and x represents the moles of water entrained into the zeolite framework.

3. (Original) The method of claim 1, wherein the zeolite is selected from the group consisting of analcime, bikitaite, brewsterite, chabazite, clinoptilolite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite.

4. (Original) The method of claim 1 wherein the base blend comprises from about 20 to about 50 weight percent zeolite.

5. (Original) The method of claim 1 wherein the base blend comprises from about 30 to about 90 weight percent zeolite.
6. (Currently Amended) The method of claim 1 wherein the base blend comprises ~~from about 5 to about 75~~ at least about 30 weight percent zeolite.
7. (Original) The method of claim 1 wherein the base blend comprises from about 50 to about 75 weight percent zeolite.
8. (Currently Amended) The method of claim 1 wherein the base blend comprises ~~from about 0.5 to about 35~~ at least about 50 weight percent zeolite.
9. (Currently Amended) The method of claim 1 wherein the ~~cement mix~~ comprises a base blend ~~comprising~~ comprises at least one cementitious material selected from the group consisting of micronized cement, Portland cement, pozzolan cement, gypsum cement, aluminous cement, silica cement, and alkaline cement.
10. (Currently Amended) The method of claim 9 wherein the cement ~~mix~~ composition further comprises fly ash.
11. (Original) The method of claim 1 wherein the mixing fluid is present in a range of about 22% to about 200% by weight of the base blend.
12. (Original) The method of claim 1 wherein the mixing fluid is present in a range of about 40% to about 135% by weight of the base blend.
13. (Original) The method of claim 1 wherein the cement composition further comprises at least one accelerating additive.

14. (Original) The method of claim 13 wherein the at least one accelerating additive is selected from the group consisting of sodium sulfate, sodium carbonate, calcium sulfate, calcium carbonate, potassium sulfate, and potassium carbonate.

15. (Original) The method of claim 14 wherein the cement composition comprises at least two accelerating additives selected from the group consisting of sodium sulfate, sodium carbonate, calcium sulfate, calcium carbonate, potassium sulfate, and potassium carbonate.

16. (Original) The method of claim 15 wherein at least one accelerating additive is selected from the group consisting of sodium sulfate, calcium sulfate, and potassium sulfate; and at least one accelerating additive is selected from the group consisting of sodium carbonate, calcium carbonate, and potassium carbonate.

17. (Currently Amended) The method of claim 1 wherein the cement ~~mix~~ composition further comprises:
 ~~a base blend comprising zeolite and at least one cementitious material; and~~
 at least one accelerating additive in an amount of about 0.5% to about 10% by weight of the base blend.

18. (Original) The method of claim 17 wherein the accelerating additive is present in the base blend in an amount of about 3% to about 7% by weight of the base blend.

19. (Original) The method of claim 1 wherein the cement composition further comprises a fluid loss control additive selected from the group consisting of anionic water based soluble polymers, hydrophobically modified anionic water based soluble polymers, non-ionic water based soluble polymers and hydrophobically modified non-ionic water based soluble polymers.

20. (Original) The method of claim 1 wherein the cement composition further comprises a fluid loss control additive selected from the group consisting of hydroxyethylcellulose, hydrophobically modified hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, guar,

modified guar, polyvinyl alcohol, montmorillonite clay, anhydrous sodium silicate, grafted polymers prepared by the polymerization of monomers or salts of monomers of N,N-dimethylacrylamide, 2-acrylamido-2-methylpropanesulfonic acid and acrylonitrile having a lignin or lignite or other backbone, and copolymers or salts of copolymers of N,N-dimethylacrylamide (NNDMA) and 2-acrylamido, 2-methyl propane sulfonic acid (AMPS).

21. (Currently Amended) The method of claim 1 wherein the cement ~~mix~~ composition further comprises:

~~a base blend comprising zeolite and at least one cementitious material; and~~
at least one fluid loss control additive in an amount of about 0.5% to about 1.0% by weight of the base blend.

22. (Original) The method of claim 1 wherein a flow enhancing agent is absorbed on the zeolite.

23. (Original) The method of claim 22 wherein the flow enhancing agent is present in an amount of from about 15% to about 25% by weight of the zeolite.

24. (Currently Amended) The method of claim 1 wherein the base blend comprises zeolite in an amount of from about 35% to about 50% ~~of the~~ by weight of the base blend, and the cement composition formed has a density ~~equal~~ up to about 13.5 lb/gal.

25. (Original) The method of claim 1 wherein the zeolite has a mean particle size of about 100 microns or less.

26. (Original) The method of claim 1 wherein the zeolite has a mean particle size from about 3 microns to about 15 microns.

27. (Currently Amended) The method of claim 1 further comprising reducing an apparent viscosity of the cement composition ~~wherein the reduction is caused by dispersant properties of~~ with the zeolite.
28. (Original) The method of claim 1 wherein the mixing fluid comprises water.
29. (Original) The method of claim 28 wherein the mixing fluid further comprises a defoaming agent.
30. (Original) The method of claim 28 wherein the mixing fluid further comprises bentonite.
31. (Currently Amended) The method of claim 1 ~~further comprising preparing wherein the base blend by mixing~~ comprises about 22 weight percent zeolite and at least one cementitious material.
32. (Currently Amended) The method of ~~claim 31 wherein the~~ claim 1 further comprising preparing of the base blend ~~comprises by~~ mixing zeolite in an amount from about 20 to about 50 weight percent with at least one cementitious material.
33. (Currently Amended) The method of ~~claim 31 wherein the~~ claim 1 further comprising preparing of the base blend ~~comprises by~~ mixing zeolite in an amount from about 30 to about 90 weight percent with at least one cementitious material.
34. (Currently Amended) The method of ~~claim 31~~ claim 1 wherein the ~~preparing of the base blend comprises mixing zeolite in an amount from about 5 to about 75~~ at least about 35 weight percent zeolite ~~with at least one cementitious material.~~
35. (Currently Amended) The method of ~~claim 31 wherein the~~ claim 1 further comprising preparing of the base blend ~~comprises by~~ mixing zeolite in an amount from about 50 to about 75 weight percent with at least one cementitious material.

36. (Currently Amended) The method of ~~claim 31~~ claim 1 wherein ~~the preparing of the base blend comprises mixing zeolite in an amount from about 0.5 to about 35~~ at least about 40 weight percent zeolite with at least one cementitious material.

37 – 42 (Cancelled)

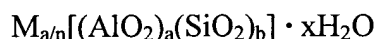
43 – 54 (Cancelled)

55. (Currently Amended) A method of sealing a subterranean zone penetrated by a wellbore comprising:

~~blending a cement mix comprising a~~ cementitious base blend with an aqueous zeolite suspension to form a cement composition, which aqueous zeolite suspension causes the cement composition to have a zeolite content of at least about 30 weight percent of the weight of the cementitious base;

placing the cement composition into the subterranean zone; and
allowing the cement composition to set therein.

56. (Original) The method of claim 55 wherein the aqueous zeolite suspension comprises zeolite represented by the formula:



where M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH₄, CH₃NH₃, (CH₃)₃NH, (CH₃)₄N, Ga, Ge and P; n represents the cation valence; the ratio of b:a is in a range from greater than or equal to 1 and less than or equal to 5; and x represents the moles of water entrained into the zeolite framework.

57. (Original) The method of claim 55, wherein the aqueous zeolite suspension comprises zeolite selected from the group consisting of analcime, bikitaite, brewsterite, chabazite,

clinoptilolite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite.

58. (Original) The method of claim 55 further comprising mixing zeolite with a mixing fluid to form the aqueous zeolite suspension.
59. (Original) The method of claim 58 wherein the aqueous zeolite suspension is formed by mixing zeolite in an amount from about 40 to about 50 weight percent with the mixing fluid.
60. (Original) The method of claim 58 wherein the mixing fluid comprises water.
61. (Currently Amended) The method of claim 58 wherein the aqueous zeolite suspension is stable for at least two weeks before the blending with the ~~cement mix~~ cementitious base.
62. (Currently Amended) The method of claim 55 wherein the ~~cement mix comprises a~~ cementitious base blend comprising ~~comprises a blend of at least one~~ cementitious material.
63. (Currently Amended) The method of claim 62 wherein the cement ~~mix~~ composition further comprises hydrated lime.
64. (Currently Amended) The method of claim 55 wherein the blending further comprises blending the aqueous zeolite suspension in an amount of about 1-150% by weight of the cementitious base blend ~~with the cement mix~~.
65. (Currently Amended) The method of claim 55 further comprising mixing the aqueous zeolite suspension with a mixing fluid before the blending of the aqueous zeolite suspension with the ~~cement mix~~ cementitious base.
66. (Original) The method of claim 65 wherein the mixing fluid comprises water.

67. (Currently Amended) The method of claim 65 further comprising mixing the ~~ement mix~~ cementitious base with a mixing fluid before the blending of the ~~ement mix~~ cementitious base with the aqueous zeolite suspension.

68. (Currently Amended) The method of claim 55 further comprising mixing the ~~ement mix~~ cementitious base with a mixing fluid before the blending of the ~~ement mix~~ cementitious base with the aqueous zeolite suspension.

69. (Currently Amended) The method of claim 55 further comprising adding lightweight materials to the aqueous zeolite suspension prior to the blending of the aqueous zeolite suspension with the ~~ement mix~~ cementitious base.

70. (Currently Amended) The method of claim 69 further comprising adding the lightweight materials to the aqueous zeolite suspension in an amount of from about 1% to about 70% by weight of the ~~ement mix~~ cementitious base blend comprising the cement mix.

71. (Original) The ~~method~~ of claim 70 further comprising
mixing zeolite with a mixing fluid to form the aqueous zeolite suspension; and
adding at least one lightweight material to the aqueous zeolite suspension.

72. (Currently Amended) The method of claim 71 further comprising
mixing the ~~ement mix~~ cementitious base with a mixing fluid prior to the blending of the aqueous zeolite suspension with the ~~ement mix~~ cementitious base.

73. (Currently Amended) The method of claim 72 further comprising blending the aqueous zeolite suspension with the ~~ement mix~~ cementitious base to form a cement composition having a density less than about 12 lb/gal.

74. (Currently Amended) A method of sealing a subterranean zone penetrated by a wellbore comprising:

~~mixing a cement mix comprising a base blend comprising zeolite and at least one cementitious material~~ with a mixing fluid to form an unfoamed cement composition, wherein the base blend comprises at least one cementitious material and at least about 20 weight percent zeolite;

foaming the unfoamed cement composition to form a foamed cement composition;
placing the foamed cement composition into the subterranean zone; and
allowing the foamed cement composition to set therein.

75. (Currently Amended) The method of claim 74 wherein the unfoamed cement mix composition further comprises bentonite.

76. (Original) The method of claim 74 wherein the foamed cement composition has a density of at least 8 lb/gal.

77. (Currently Amended) The method of claim 74 wherein the base blend comprises from about 20 to about 40 weight percent zeolite.

78. (Currently Amended) The method of claim 74 further comprising blending the ~~cement mix~~ base blend with an aqueous zeolite suspension prior to the foaming.

79. (Original) The method of claim 78 further comprising forming the aqueous zeolite suspension by mixing zeolite in an amount from about 40 to about 50 weight percent with a mixing fluid.

80. (Original) The method of claim 78 wherein the foamed cement composition is stabilized by the zeolite in the aqueous zeolite suspension.

81. (Currently Amended) The method of claim 74 wherein the foamed cement composition is stabilized caused by the zeolite in the base blend.

82. (Currently Amended) The method of claim 74 ~~further comprising preparing the cement mix by mixing zeolite and at least one cementitious material to form~~ wherein the base blend comprises at least about 30 weight percent zeolite.

83. (Currently Amended) The method of claim 82 ~~further comprising mixing the zeolite and the at least one cementitious material with bentonite~~ 74 wherein the base blend comprises at least about 40 weight percent zeolite.

84. (Currently Amended) The method of ~~claim 82~~ claim 74 wherein ~~the forming of the base blend comprises mixing the zeolite in an amount from about 20 to about 40~~ of at least 50 weight percent with the at least one cementitious material.

85 – 198 (Cancelled)

199. (Currently Amended) A method of sealing a subterranean zone penetrated by a wellbore comprising:

mixing a base blend comprising at least one cementitious material with zeolite in an amount of at least about 5 weight percent of the weight of the base blend to form a cement mix, which zeolite is selected from the group consisting of analcime, bikitaite, brewsterite, chabazite, clinoptilolite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite;

mixing the cement mix with a mixing fluid to form a cement composition;

placing the cement composition into the subterranean zone; and

allowing the cement composition to set therein.

200. (Currently Amended) The method of claim 199 wherein the ~~cement mix comprises a~~ base blend comprising is 100 weight percent ~~of the at least one~~ cementitious material.

201. (Currently Amended) The method of claim ~~200~~ 199 wherein the mixing of the base blend with zeolite ~~further~~ comprises mixing the base blend with zeolite in an amount of from about 5% to about 25% by weight of the base blend.

202. (Currently Amended) The method of claim ~~201~~ 199 wherein the mixing of the base blend with zeolite further comprises mixing a lightweight additive with the base blend and the zeolite.

203. (Currently Amended) The method of claim ~~201~~ 199 wherein the mixing of the base blend with zeolite further comprises mixing a dispersant with the base blend and the zeolite.

204 – 213 (Cancelled)

214. (Currently Amended) A method of sealing a subterranean zone penetrated by a wellbore comprising:

mixing a ~~cement mix comprising~~ a base blend ~~comprising at least one cementitious material~~ with an aqueous zeolite suspension and a mixing fluid to form an unfoamed cement composition, wherein the base blend comprises at least one cementitious material and the aqueous zeolite suspension comprises at least about 40 weight percent zeolite;

foaming the unfoamed cement composition to form a foamed cement composition;
placing the foamed cement composition into the subterranean zone; and
allowing the foamed cement composition to set therein.

215. (Currently Amended) The method of claim 214 wherein the ~~cement mix comprises a~~ base blend ~~comprising~~ is 100 weight percent of ~~the at least one~~ cementitious material.

216. (Original) The method of claim 214 wherein the foamed cement composition is stabilized by the zeolite in the aqueous zeolite suspension.

217 – 220 (Cancelled)

221. (New) The method of claim 55 wherein the aqueous zeolite suspension causes the cement composition to have a zeolite content of at least about 35 weight percent of the weight of the base blend.

222. (New) The method of claim 55 wherein the aqueous zeolite suspension causes the cement composition to have a zeolite content of at least about 50 weight percent of the weight of the base blend.

223. (New) The method of claim 55 wherein the aqueous zeolite suspension causes the cement composition to have a zeolite content of at least about 67 weight percent of the weight of the base blend.

224. (New) The method of claim 55 wherein the blending further comprises blending the aqueous zeolite suspension in an amount of about 130-206% by weight of the base blend.

225. (New) The method of claim 74 wherein the zeolite is selected from the group consisting of analcime, bikitaite, brewsterite, chabazite, clinoptilolite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite.